ARE SEVERE HEAT WAVE EPISODES STILL AFFECTING MORTALITY IN ITALIAN CITIES?

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Background and Aims: In July 2010 the North and Centre of Italy were affected by severe heat-wave episodes. In most Italian cities an operational program for the prevention of heat-health effects is ongoing since 2004, based on city-specific Heat Health Watch Warning Systems (HHWWS). The objective is to evaluate the impact of 2010 heat-wave in Italian cities and to discuss possible public health implications.
Methods: Mortality data for all natural causes in subjects aged 65+ was retrieved from the national mortality surveillance system. The impact of the 2010 heat-wave was first explored computing excess mortality during high-risk warning days (HHWWS: level 2 and 3), as difference between observed and expected mortality from historical time series data.
A time-series approach (GEE) was then used to estimate the increase in mortality during heatwave days compared to non heat-wave days in a reference period (2007-2010) Heat-wave was defined as 2 or more consecutive days with maximum apparent and minimum temperature above the 90th monthly percentile.
Results: During the July heat-wave (between 1-24 July), a significant excess in mortality was observed in 11 cities (+854 deaths, around +30% increase). Results from the GEE model showed a significant increase during heat-wave days compared with non heat-wave days in several cities (+31.3% in Torino, +36.3% in Genova, +21.4% in Rome).
Conclusions: Although other analysis suggest a temporal reduction in the impact of heat on elderly mortality in Italian cities due to the introduction of heat-response plans, these results show that in 2010 heat wave episodes still have a significant impact on mortality. The evaluation of prevention measures to identify the most effective in coping with heat-waves should become a public health priority.